AMENDMENTS TO THE CLAIMS

1-59. **(Canceled)**

60. **(New)** A method for vaccinating a mammal against a target antigen, comprising:

introducing into the mammal by disrupting the stratum corneum an effective dose of the target antigen or an epitope(s) thereof; and

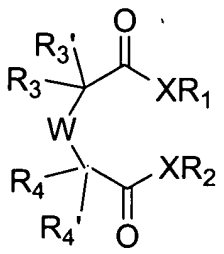
administering to the mammal a topical treatment which in the absence of antigen is sufficient to increase the number of dendritic cells migrating to a lymphoid organ.

61. **(New)** The method of Claim 60, wherein the topical treatment comprises a lipophilic molecule capable of traversing the stratum corneum.

62. **(New)** The method of Claim 61, wherein the lipophilic molecule is ≤500 daltons.

63. **(New)** The method of Claim 62, wherein the lipophilic molecule is dibutyl phthalate or camphor.

64. **(New)** The method of Claim 62, wherein the lipophilic molecule is selected from the following formulas:



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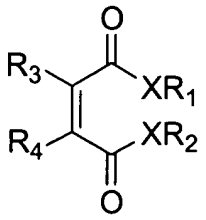

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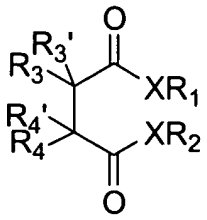


(3)

wherein R_1 and R_2 are independently alkyl side chains containing 1 to 16 carbon atoms, C_1 to C_{16} substituted alkyl, C_3 to C_{10} cycloalkyl, C_3 to C_{10} substituted cycloalkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_2 to C_{10} alkynyl, C_2 to C_{10} substituted alkynyl;

wherein R_3, R_3', R_4 and R_4' are selected independently from the group consisting of hydrogen atom, hydroxy group, halogen group, alkyl side chains containing 1 to 16 carbon atoms, C_1 to C_{16} substituted alkyl, C_3 to C_{10} cycloalkyl, C_3 to C_{10} substituted cycloalkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_2 to C_{10} alkynyl, C_2 to C_{10}

substituted alkynyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl and substituted naphthyl;

wherein X is an oxygen or a nitrogen atom; and

wherein W is a saturated or unsaturated chain consisting of C_1-C_{10} alkyl, C_1-C_{10} substituted alkyl, C_7-C_{10} phenylalkyl, C_7-C_{16} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, C_3-C_7 cycloalkyl and C_3-C_7 substituted cycloalkyl group, and wherein each terminus of the chain is bonded to the carbon $C(R_3R_3')$ and $C(R_4R_4')$.

65. **(New)** The method of Claim 64, wherein W contains one or more heteroatoms selected from the group consisting of nitrogen, sulfur, and oxygen in combination or independently.

66. **(New)** The method of Claim 64, wherein the R_1 and R_2 groups are identical C_1 to C_6 alkyl moieties.

67. **(New)** The method of Claim 64, wherein R_1 and R_2 are $(CH_2)_3$-CH_3.

68. **(New)** The method of Claim 64, wherein X is an oxygen and R_3 and R_4 are linked to form a ring structure which, including the W chain, comprises a saturated or unsaturated C_3 to C_{10} cycloalkyl, C_3 to C_{10} substituted cycloalkyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl or substituted naphthyl.

69. **(New)** The method of Claim 64, wherein X is an oxygen and R_3 and R_4 are linked to form a ring structure which, including the W chain, comprises a saturated or unsaturated C_3 to C_{10} cycloalkyl, C_3 to C_{10} substituted cycloalkyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl or substituted naphthyl, and wherein the ring structure is an aryl group.

70. **(New)** The method of Claim 64, wherein the ring structure contains one or more heteroatoms selected from the group consisting of nitrogen, sulfur, and oxygen.

71. **(New)** The method of Claim 64, wherein the lipophilic molecule is selected from the group consisting of dibutyl phthalate, dibutyl-D-tartrate, N,N-diethyl-toluamide, dibutylfumarate, di(2-ethylhexyl)fumarate, diisooctylmaleate, diethylhexylmaleate, diisooctylfumarate, benzoic acid, bihenylmaleate, dioctylphthalate, dibutylmaleate, dioctymaleate, dibutylsuccinate, dioctylsuccinate, dinonylphthalate, diisononylphthalate,

dimethylphthalate, diethylphthalate, dipropylphthalate, diphenylphthalate, dibenzylbutylphthalate, and diethylmethylphthalate.

72. **(New)** The method of Claim 61, wherein the lipophilic molecule comprises a terpene.

73. **(New)** The method of Claim 61, wherein the lipophilic molecule has an oil/water partition coefficient >1.

74. **(New)** The method of Claim 61, wherein the lipophilic molecule has an oil/water partition coefficient of between about 10 and about 10^6.

75. **(New)** The method of Claim 60, wherein the topical treatment further comprises an organic solvent.

76. **(New)** The method of Claim 75, wherein the organic solvent is acetone.

77. **(New)** The method of Claim 60, wherein the topical treatment comprises ultrasound.

78. **(New)** The method of Claim 60, wherein the introducing step further comprises transferring cells comprising the target antigen or epitope(s) thereof.

79. **(New)** The method of Claim 78, wherein the target antigen is selected from the group consisting of a virus, a bacterium, a fungus, and a parasite.

80. **(New)** The method of Claim 60, wherein the introducing step further comprises injecting the target antigen or epitope(s) thereof.

81. **(New)** The method of Claim 80, wherein the injection is made via a route selected from the group consisting of intraepidermal, intradermal, subcutaneous, intramuscular, intravascular, or into a specific organ.

82. **(New)** The method of Claim 60, wherein the topical treatment further increases the number of target antigen-bearing dendritic cells in the lymphoid organ by a factor of about 2 to about 1000 times the number of resident dendritic cells in an untreated mammal.

83. **(New)** The method of Claim 82, wherein the number of target antigen-bearing dendritic cells in the lymphoid organ is increased by a factor of about 5 to about 100 times.

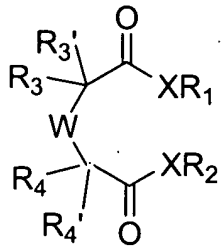
84. **(New)** The method of Claim 60, wherein the target antigen is a tumor antigen.

85. **(New)** A method for vaccinating a mammal against a target antigen, comprising:

introducing into the mammal by disrupting the stratum corneum an effective dose of the target antigen or an epitope(s) thereof; and

administering to the mammal a topical treatment which in the absence of antigen is sufficient to increase the number of dendritic cells migrating to a lymphoid organ,

wherein the topical treatment comprises a lipophilic molecule selected from the following formulas:



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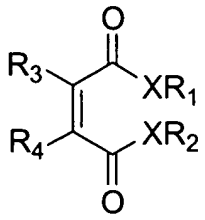

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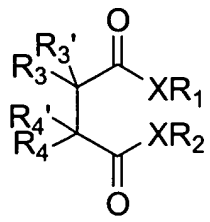

(3)

wherein R_1 and R_2 are independently alkyl side chains containing 1 to 16 carbon atoms, C_1 to C_{16} substituted alkyl, C_3 to C_{10} cycloalkyl, C_3 to C_{10} substituted cycloalkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_2 to C_{10} alkynyl, C_2 to C_{10} substituted alkynyl;

wherein R_3, R_3', R_4 and R_4' are selected independently from the group consisting of hydrogen atom, hydroxy group, halogen group, alkyl side chains containing 1 to 16 carbon atoms, C_1 to C_{16} substituted alkyl, C_3 to C_{10} cycloalkyl, C_3 to C_{10} substituted cycloalkyl, C_2 to C_{10} alkenyl, C_2 to C_{10} substituted alkenyl, C_2 to C_{10} alkynyl, C_2 to C_{10} substituted alkynyl, C_7 to C_{16} phenylalkyl, C_7 to C_{16} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl and substituted naphthyl;

wherein X is an oxygen or a nitrogen atom; and

wherein W is a saturated or unsaturated chain consisting of C_1-C_{10} alkyl, C_1-C_{10} substituted alkyl, C_7-C_{10} phenylalkyl, C_7-C_{16} substituted phenylalkyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, C_3-C_7 cycloalkyl and C_3-C_7 substituted cycloalkyl group, and wherein each terminus of the chain is bonded to the carbon $C(R_3R_3')$ and $C(R_4R_4')$.